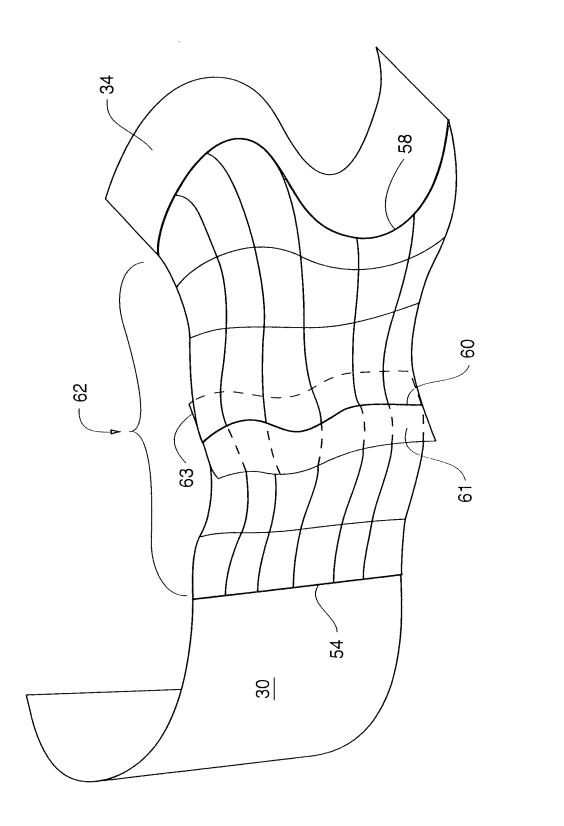
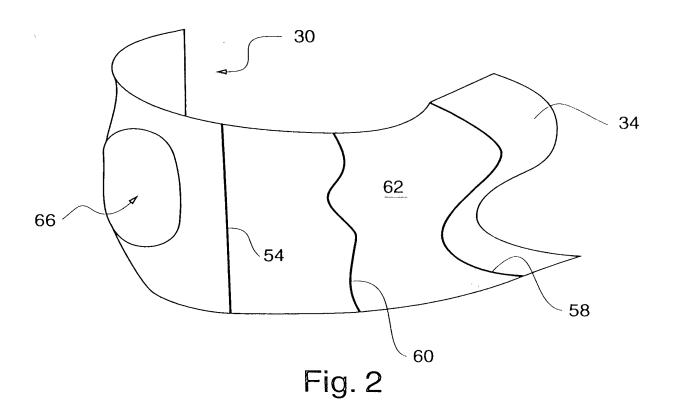
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Title: "GEOMETRIC DESIGN AND MODELING SYSTEM USING CONTROL GEOMETRY"
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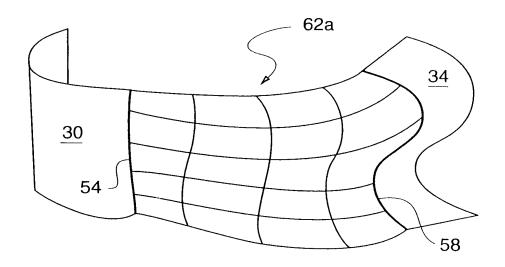
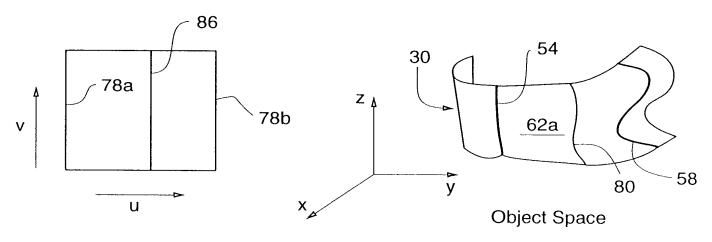


Fig. 3

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Parameter Space

Fig. 4

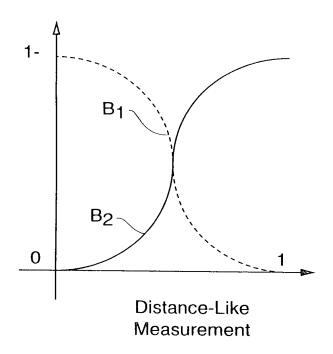


Fig. 5

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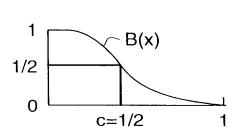


Fig. 6A

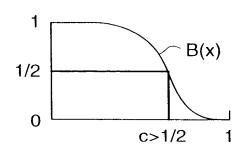


Fig. 6B

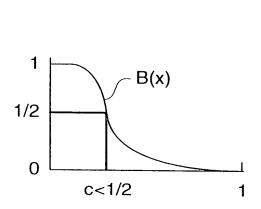


Fig. 6C

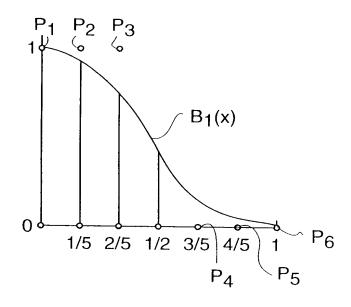
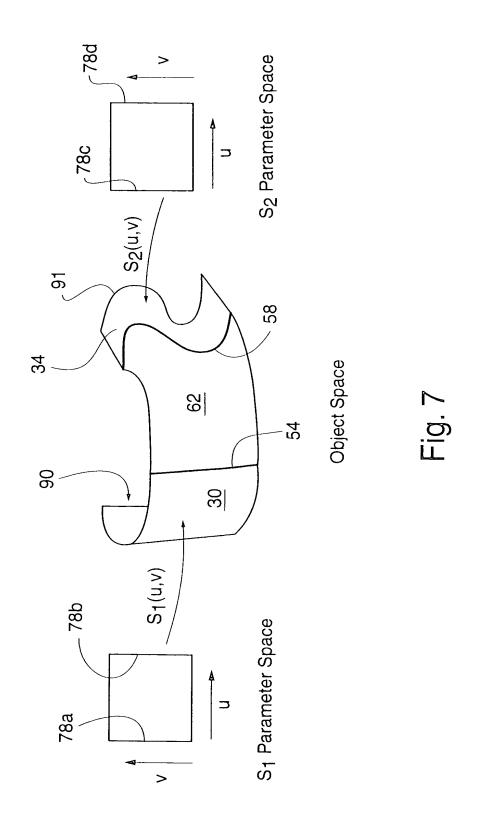


Fig. 6D

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Attorney: Dennis L Durray.

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Attorney: Dennis J. Dupray
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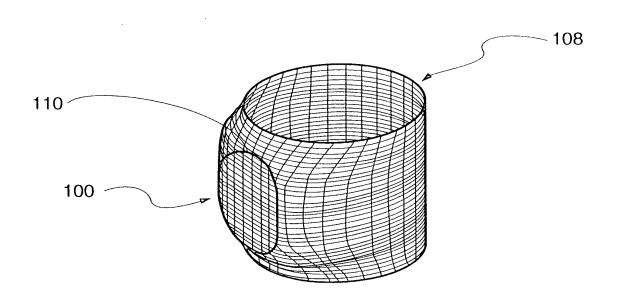


Fig. 8

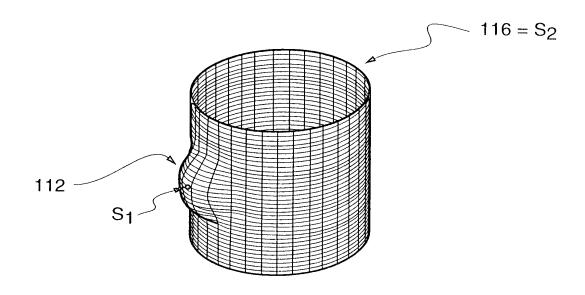


Fig. 9

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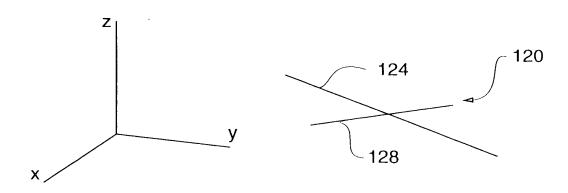


Fig. 10

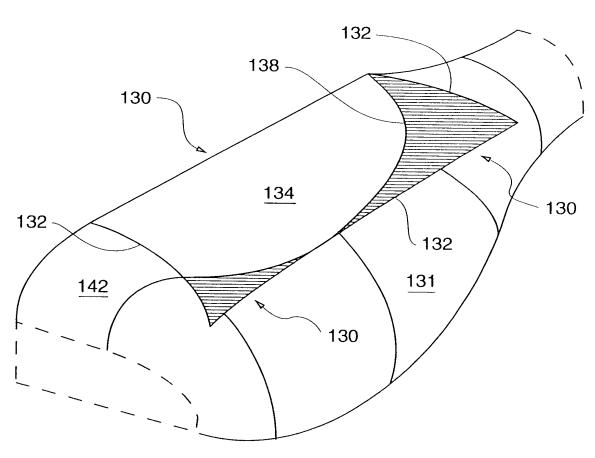


Fig. 11

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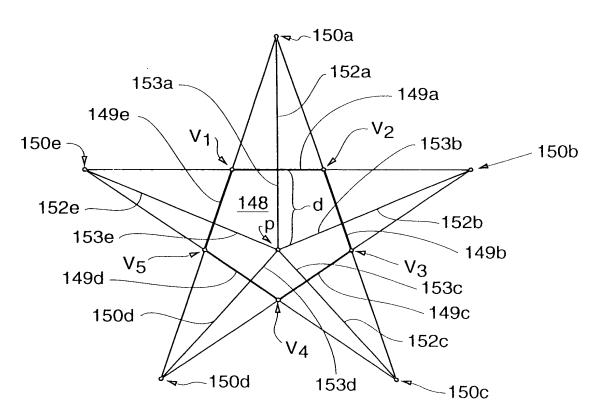


Fig. 12

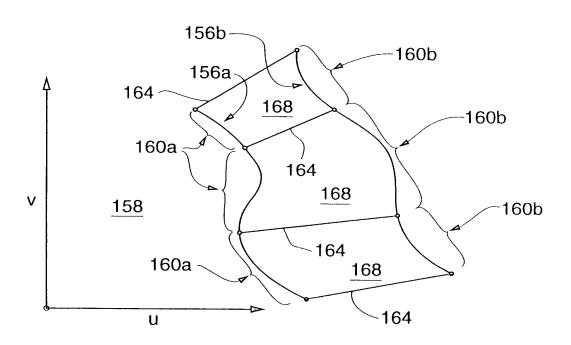


Fig. 13

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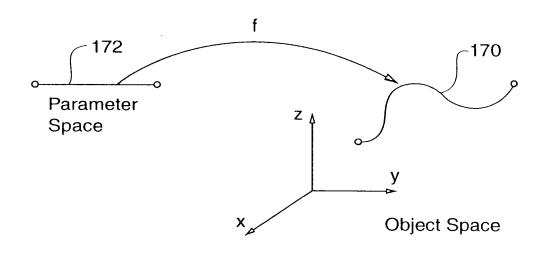
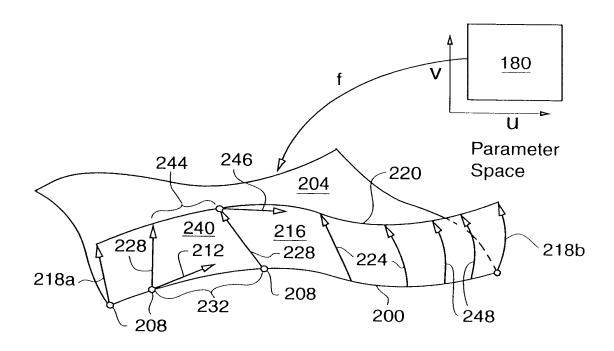


Fig. 15



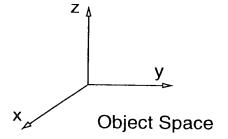


Fig. 16

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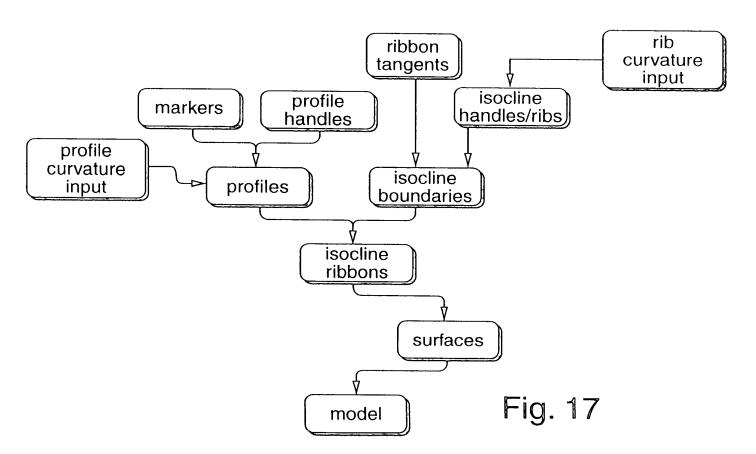
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 $V_1$  $S_1$ S3 300  $S_2$ 

Fig. 14

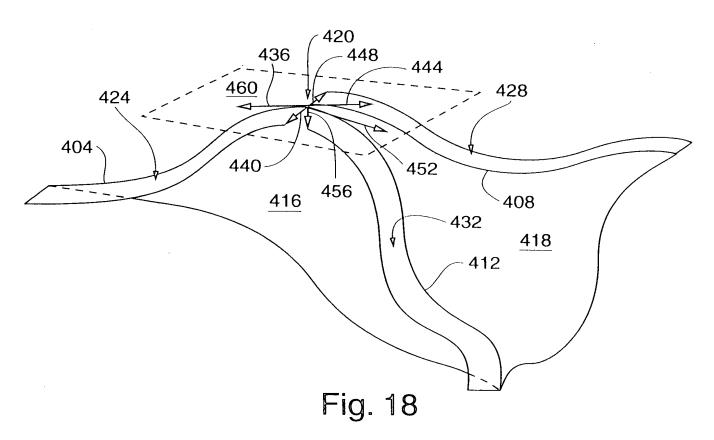


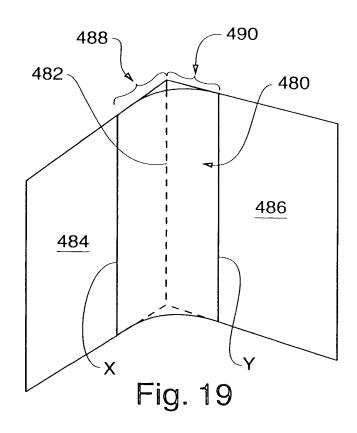
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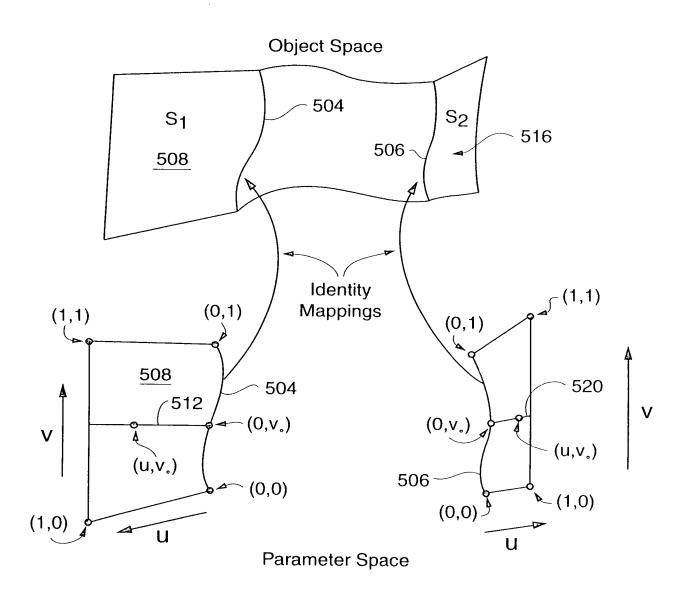


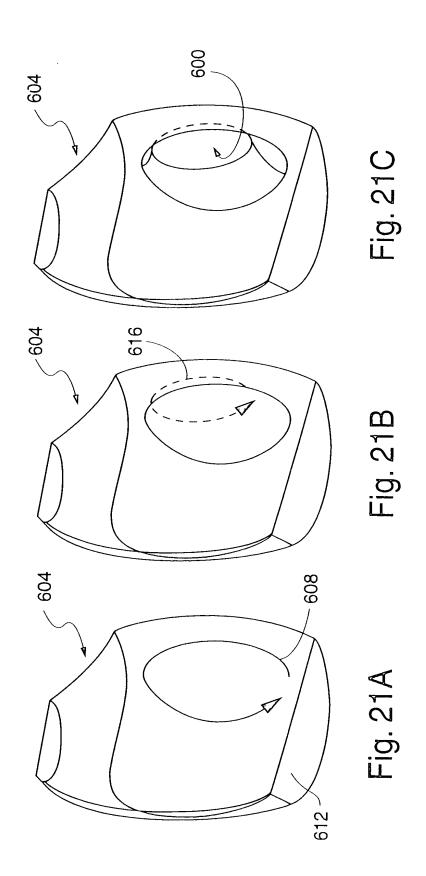
Fig. 20

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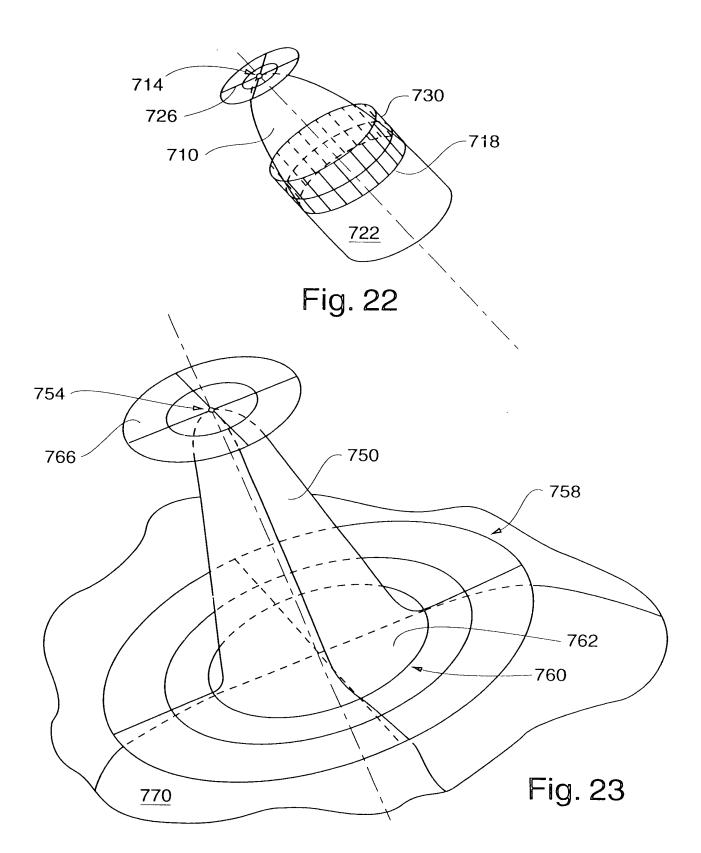
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Attorney: Dennis J. Dupray

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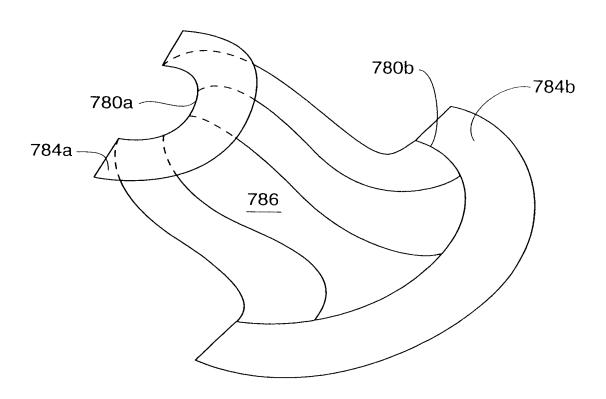
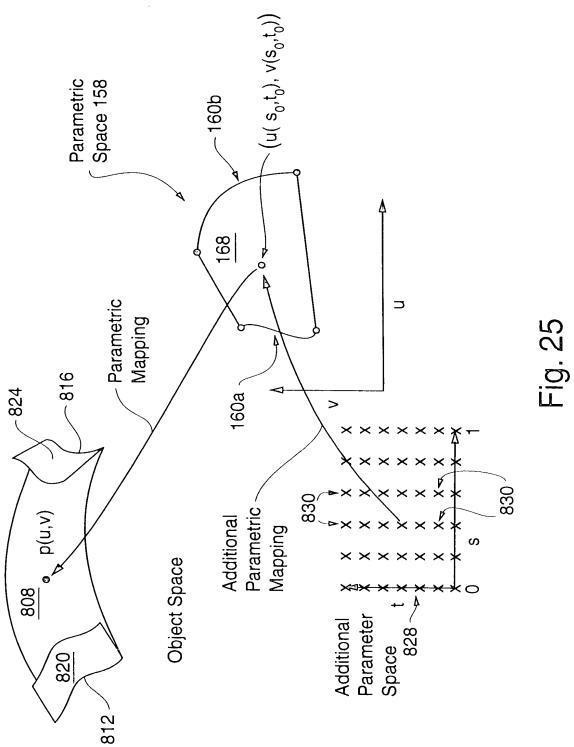


Fig. 24

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### CURVE INTERPOLATION (PT1, PT2, TAN1, TAN2)

START

1004

FOR ANY OF THE PARAMETERS PT1, PT2, TAN1, TAN2 NOT DEFINED, PROVIDE VALUES FOR THEM AS FOLLOWS:

PT1 GET A FIRST POINT TO BE ON THE INTERPOLATED CURVE.

PT2 ← DETERMINE A SECOND POINT TO BE ON THE INTERPOLATING CURVE

VECTOR AT PT1 TO THE INTERPOLATING CURVE.

VECTOR AT PT2 TO THE INTERPOLATING CURVE.

DETERMINE A FIRST BLENDING FUNCTION FOR BLENDING TAN1 INTO THE INTERPOLATING CURVE SO THAT THE INTERPOLATING CURVE HAS TAN1 AS ITS DERIVATIVE VECTOR AT PT1.

1008

DETERMINE A SECOND BLENDING FUNCTION FOR B<sub>2</sub> ← BLENDING TAN2 INTO THE INTERPOLATING CURVE SO THAT THE INTERPOLATING CURVE HAS TAN2 AS ITS DERIVATIVE VECTOR AT PT2.

1012

GENERATE THE DESIRED INTERPOLATING CURVE, C, BY EXECUTING THE FOLLOWING STATEMENT FOR VALUES OF u,  $o \le u \le 1$ .

C(u) 
$$\leftarrow$$
 B<sub>1</sub>(D<sub>1</sub>(u)) \* [PT1 + (1-u) \* TAN1]  
+ B<sub>2</sub>(D<sub>2</sub>(u)) \* [PT2 + (u-1) \* TAN2]

WHERE  $D_1(u) = u$  AND  $D_2(u) = u$ .

<sup>∠</sup>1016

RETURN C(u)

FIG. 26

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# CONSTRUCT ISOCLINE BOUNDARY APPROXIMATION (S, PT1, PT2, C(u))

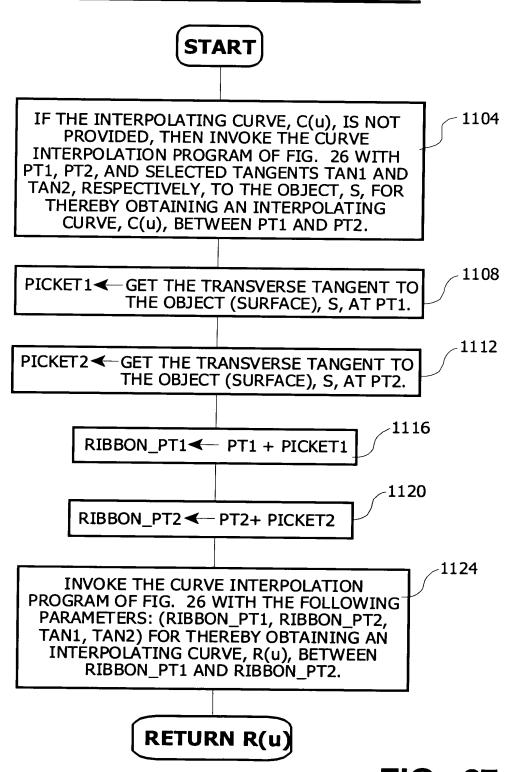


FIG. 27

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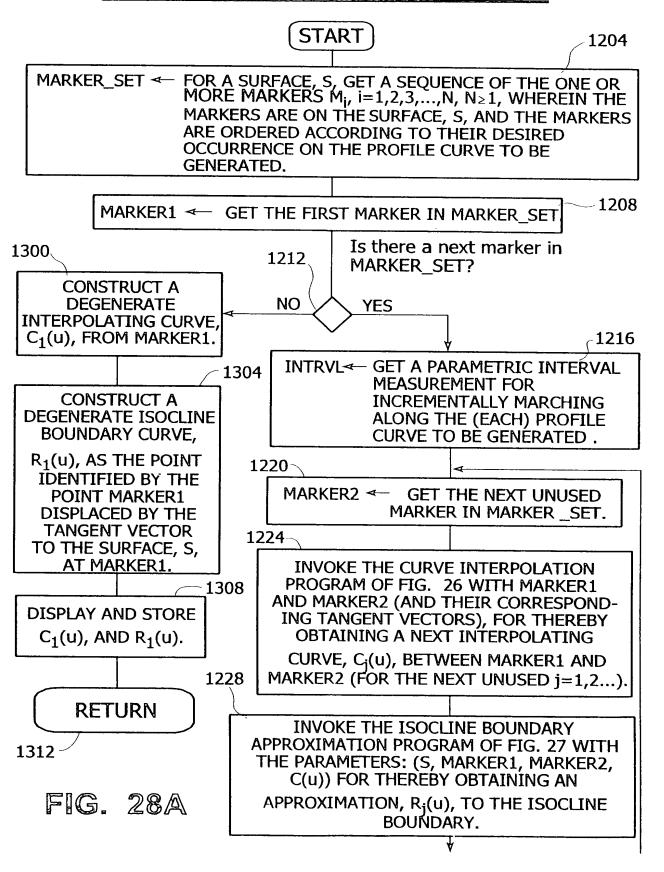
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### CONSTRUCT ISOCLINE RIBBON/BOUNDARY



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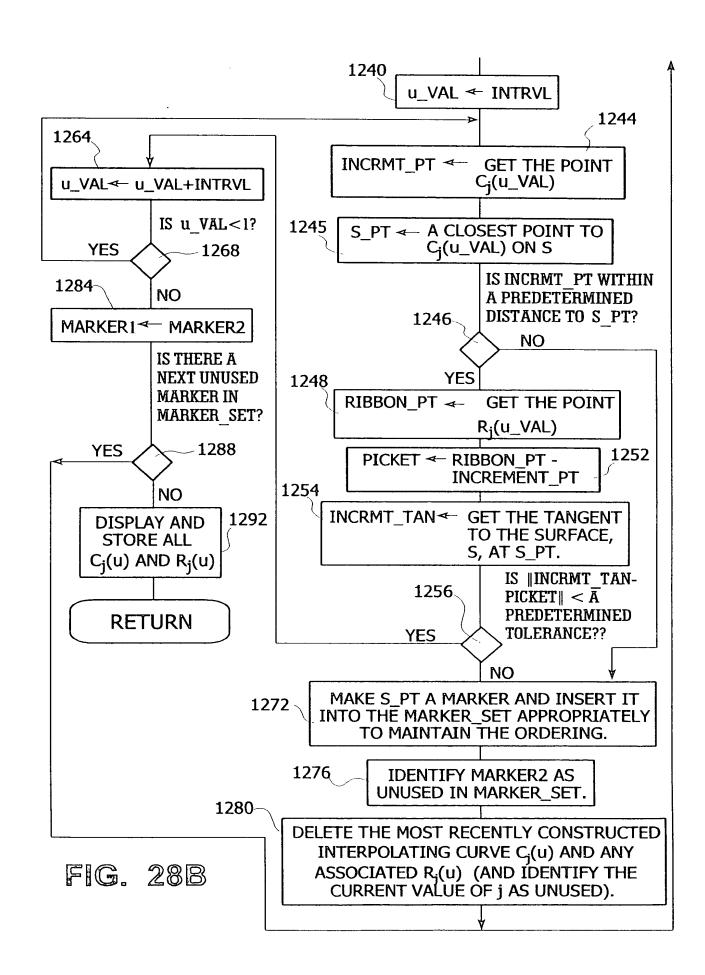
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Inventor(s):

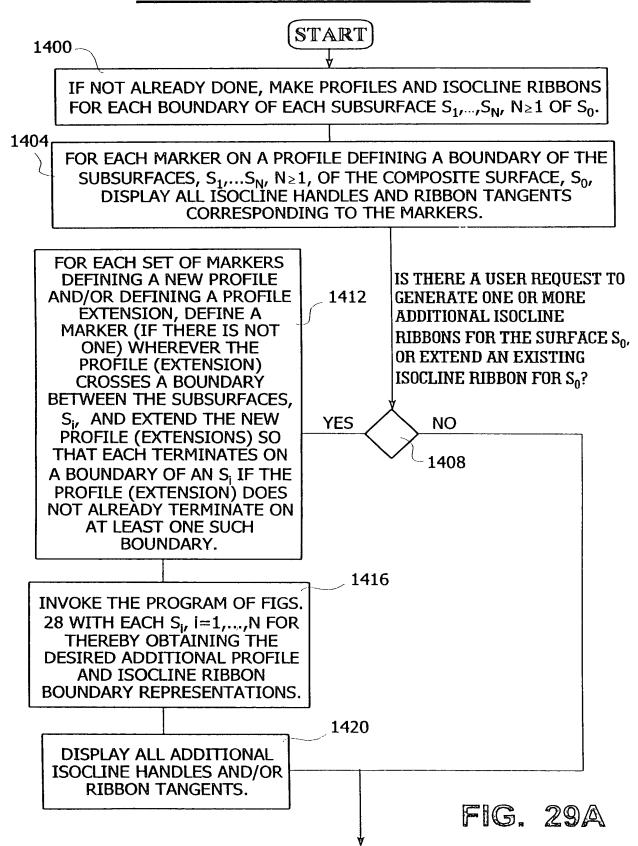
Filed: Herewith "GEOMETRIC DESIGN AND MODELING SYSTEM USING

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#### MODIFY A COMPOSITE SURFACE(S<sub>0</sub>)



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S<sub>0</sub> ADJACENT TO MRKR.

FIG. 29B

1444

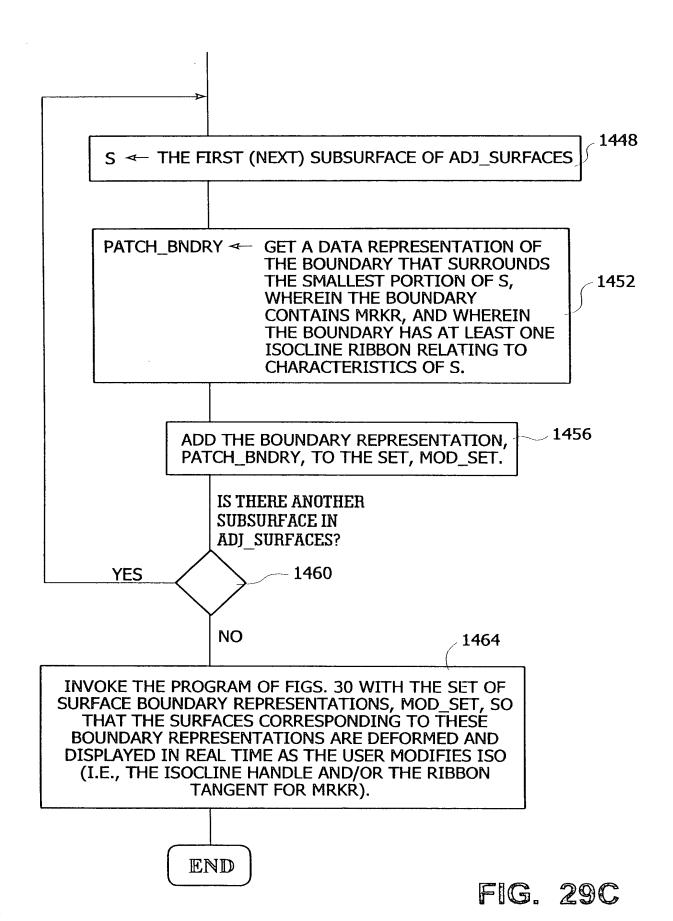
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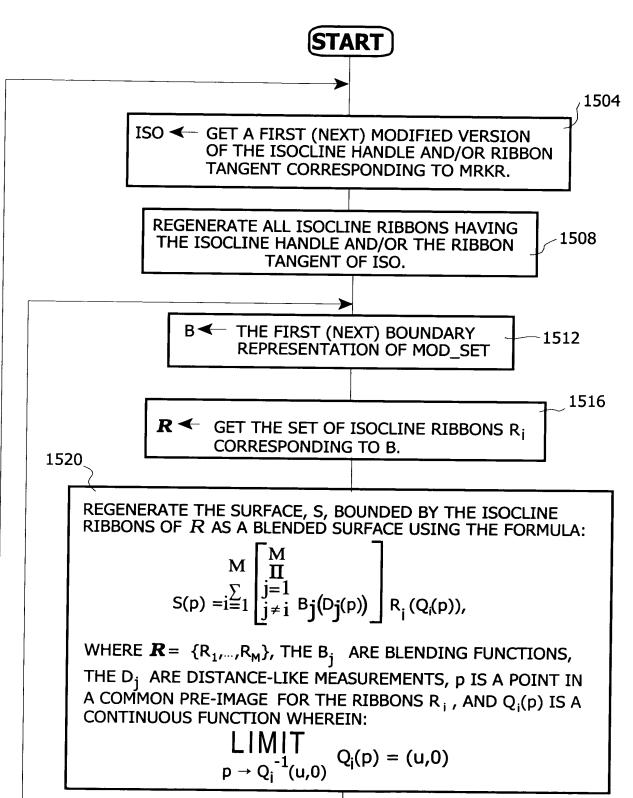
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## DEFORM\_SURFACES (MRKR, MOD\_SET)



**FIG. 30A** 

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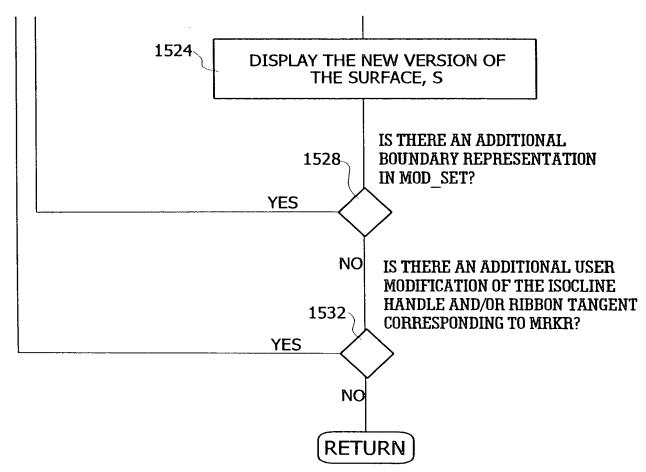


FIG. 30B

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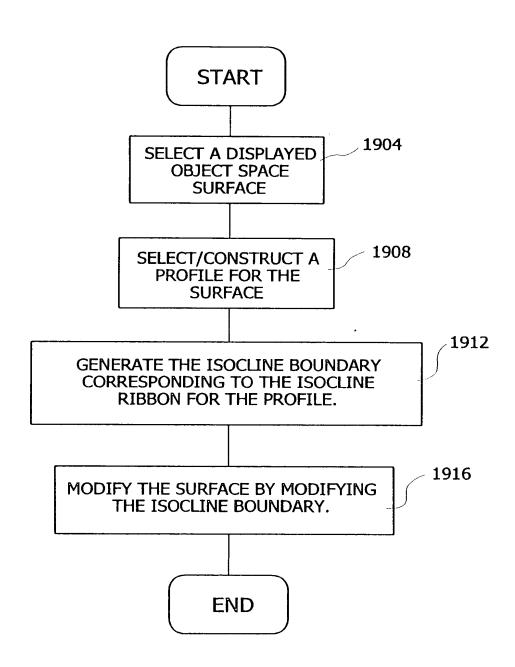


FIG. 31

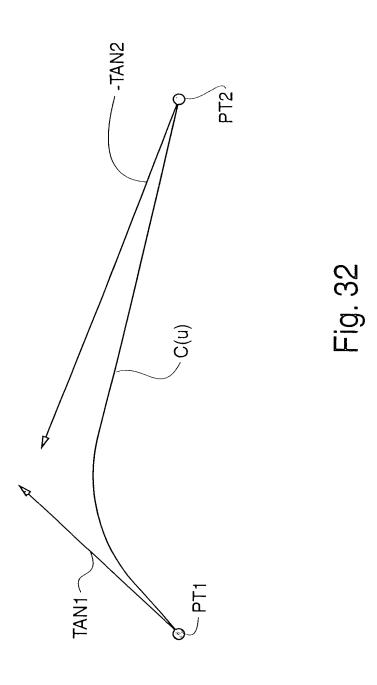
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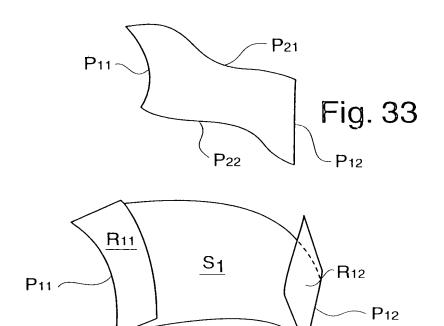
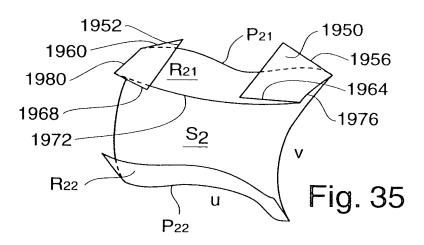
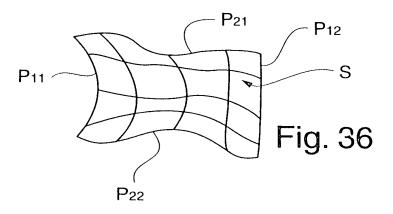


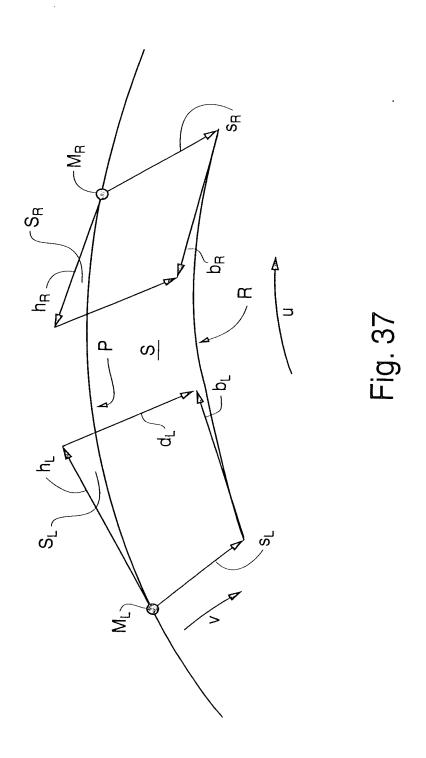
Fig. 34





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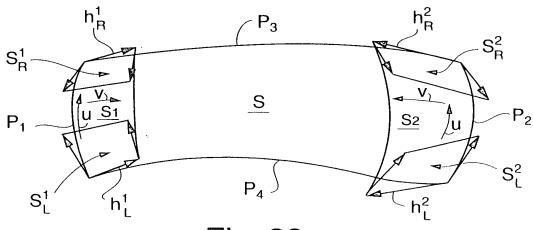
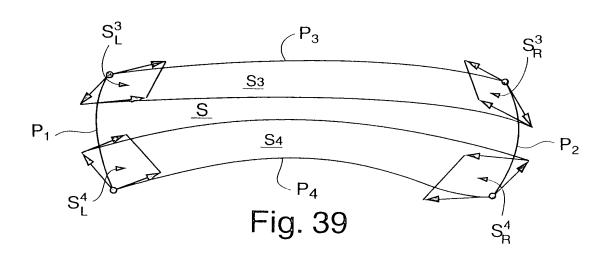


Fig. 38



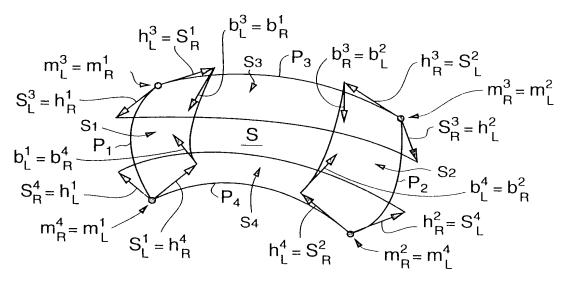


Fig. 40

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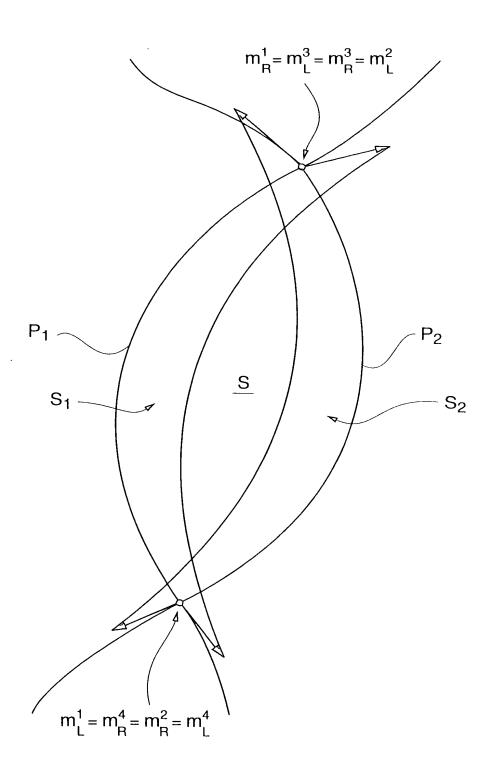


Fig. 41

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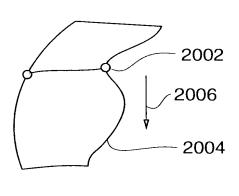


Fig. 42A

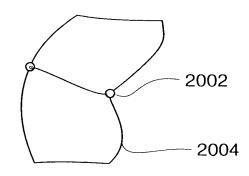
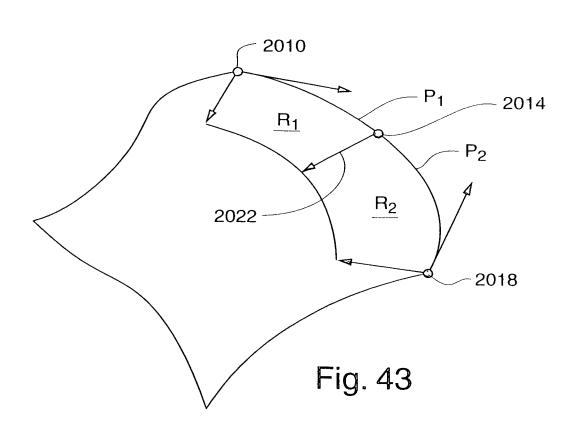


Fig. 42B



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